Neurons are basic building blocks of nervous system.

Neurons are nerve cells specialized for communicating information.

Neurons come in many sizes and shapes but they have certain features in common.
STRUCTURAL PARTS OF NEURON

- Cell body
- Dendrite
- Axon
- Cell membrane
- Nodes of Ranvier
- Glial cells

- Myelin sheath
- Axon terminals
- Synaptic vesicles
- Synapse
- Neurotransmitters
1. COMMUNICATION WITHIN NEURON:
   a. *Graded potential:*
      A basic type of signal within neuron that results from external physical stimulation of the dendrite or cell body. In contrast to the all-or-nothing nature of action potentials, graded potentials vary in proportion to the size of the stimulus that produced them.
b. Action potential:

Action potential, the basic signal in the nervous system, consists of a rapidly moving wave of depolarization that travels along the membrane of the individual neuron. As the action potential moves the negative charge across the cell membrane briefly disappears—largely as a result of positively charged particles moving inside. After the action potential passes, these particles are actively pumped back outside and the negative resting potential is restored.
2. COMMUNICATION BETWEEN NEURONS-SYNAPTIC TRANSMISSION:

Steps involved in synaptic transmissions are:

a. The transmitting or presynaptic neuron manufactures or *synthesizes*, the neurotransmitter molecules from simpler molecules derived from the food we eat and from other sources.

b. The manufactured neurotransmitter is *stored* in the bouton vesicles of the transmitter neuron.
c. Nerve impulses reaching the boutons initiate a process which causes some of the vesicles to move to the synaptic cleft, where they discharge their stored neurotransmitters.

d. The neurotransmitters rapidly diffuses across the narrow synaptic cleft and combines with specialized receptor molecules on the membrane of the receiving or postsynaptic neuron.
e. The combination of neurotransmitter and receptor initiates changes in the receiving neuron that lead to excitation or inhibition.

f. The combined neurotransmitter is rapidly deactivated (by catalysts i.e. enzymes and reuptake) as is excess neurotransmitter in the synaptic cleft, to make the post synaptic cell ready to receive another message.